

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions:

1. - 9. (Cancelled)

10. (Previously Presented) An apparatus comprising:

a digital input power rail to receive an input voltage for a display; and
a voltage regulator to regulate the input voltage to a start-up voltage during a start-up period, and to regulate the input voltage to a steady-state voltage after the start-up period, said steady-state voltage being lower than the start-up voltage,

wherein the voltage regulator comprises a pulse width modulator,
wherein, to regulate the input voltage to the start-up voltage, the pulse width modulator switches the input voltage at a first duty ratio, and, to regulate the input voltage to the steady-state voltage, the pulse width modulator switches the input voltage at a second duty ratio, and

wherein the first duty ratio is 1.

11. (Previously Presented) An apparatus comprising:

a digital input power rail to receive an input voltage for a display; and
a voltage regulator to regulate the input voltage to a start-up voltage during a start-up period, and to regulate the input voltage to a steady-state

voltage after the start-up period, said steady-state voltage being lower than the start-up voltage,

wherein the voltage regulator comprises a pulse width modulator,

wherein, to regulate the input voltage to the start-up voltage, the pulse width modulator switches the input voltage at a first duty ratio, and, to regulate the input voltage to the steady-state voltage, the pulse width modulator switches the input voltage at a second duty ratio, and

wherein the second duty ratio is 2.5/3.3.

12. (Cancelled)

13. (Previously Presented) An apparatus comprising:

a digital input power rail to receive an input voltage for a display; and

a voltage regulator to regulate the input voltage to a start-up voltage during a start-up period, and to regulate the input voltage to a steady-state voltage after the start-up period, said steady-state voltage being lower than the start-up voltage,

wherein the voltage regulator comprises a linear voltage regulator, and

wherein the linear voltage regulator comprises:

a regulating component coupled between a first node and a second node, said first node comprising the digital input power rail, said second node comprising an output power rail;

a first resistive element coupled between the first node and a third node;

a bandgap reference element coupled between a ground node and the third node;

an operational amplifier having an inverting input coupled to the third node, a non-inverting input coupled to a fourth node, and an output coupled to a fifth node;

a second resistive element coupled between the fourth node and the ground node;

a third resistive element coupled between the second node and the fourth node;

a first capacitive element coupled between the fourth node and the ground node; and

a second capacitive element coupled between the second node and the ground node.

14. (Original) The apparatus of claim 13 wherein the regulating component comprises a pass-element transistor.

15. (Original) The apparatus of claim 14 wherein the pass-element transistor comprises a p-channel metal oxide semiconductor field effect transistor (MOSFET).

16. (Original) The apparatus of claim 13 wherein the regulating component is to provide isolation between the first and second nodes.

17. (Original) The apparatus of claim 13 wherein the bandgap reference element comprises a Zener diode.

18. (Original) The apparatus of claim 13 wherein the input voltage is 3.3 volts, the steady-state voltage is 2.5 volts, and the bandgap reference element provides a reference voltage of 1.225 volts.

19. (Original) The apparatus of claim 13 wherein the first capacitive element provides the start-up period.

20. - 27. (Cancelled)

28. (Previously Presented) A system comprising:

a liquid crystal display (LCD); and

a power supply coupled to the LCD, said power supply comprising:

a digital input power rail to receive an input voltage for the LCD;

and

a voltage regulator to regulate the input voltage to a start-up voltage during a start-up period, and to regulate the input voltage to a steady-state voltage after the start-up period, said steady-state voltage being lower than the start-up voltage,

wherein the voltage regulator comprises a linear voltage regulator, and

wherein the linear voltage regulator comprises:

- a regulating component coupled between a first node and a second node, said first node comprising the digital input power rail, said second node comprising an output power rail;
- a first resistive element coupled between the first node and a third node;
- a bandgap reference element coupled between a ground node and the third node;
- an operational amplifier having an inverting input coupled to the third node, a non-inverting input coupled to a fourth node, and an output coupled to a fifth node;
- a second resistive element coupled between the fourth node and the ground node;
- a third resistive element coupled between the second node and the fourth node;
- a first capacitive element coupled between the fourth node and the ground node; and
- a second capacitive element coupled between the second node and the ground node.